

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The specification has been amended to incorporate several minor changes.

Claim 4 has been amended, without narrowing the claim scope, to address the minor issue raised on page two of the Official Action. Accordingly, withdrawal of the claim rejection based on the second paragraph of 35 U.S.C. § 112 is respectfully requested.

Appreciation is expressed to Examiner King for the indicated allowability of Claims 2-8 and 13-16. Claim 2 has been amended to include the subject recited in independent Claim 1, and Claim 1 has been canceled. It is thus submitted that Claims 2-8 are allowable. Also, the obviousness-type double patenting rejection is rendered moot.

Independent Claim 9 has been placed in independent form by incorporating the subject matter recited in independent Claim 1. Claim 9 thus now defines a braking force distribution control device comprised of a wheel speed detector for detecting wheel speeds of vehicle wheels, road surface μ slope estimating means which estimates for the respective wheels, on the basis of the detected wheel speeds, slopes of a coefficient of friction μ between the wheels and a road surface as road surface μ slopes, and a controller that distributes braking forces to the respective wheels by controlling the braking force of each wheel on the basis of the road surface μ slopes estimated for the respective wheels by the road surface μ estimating means. The controller includes a wheel target braking force

computing means that computes target braking forces of the respective wheels based on the estimated road surface μ slopes of the respective wheels and a target braking force of the vehicle, and a braking force control means for controlling the braking forces of the respective wheels based on the computed target braking forces of the respective wheels.

The Official Action observes that Japanese Published Application No. 11-020649 discloses a braking force distribution control device having all of the features recited in independent Claims 1 and 9. That rejection is respectfully traversed for at least the following reasons.

Initially, it is to be noted that Japanese Published Application No. 11-020649 has apparently not been made of record in this application. That is, it does not appear that the '649 Japanese document was cited on form PTO-892. The Examiner is thus respectfully requested to identify the cited Japanese document on form PTO-892 in the next official communication.

It is noted also that an Information Disclosure Statement was filed in connection with this application on August 3, 2001. An initialed, signed and dated copy of form PTO-1449 submitted with that Information Disclosure Statement has not yet been returned. It appears that perhaps an initialed, signed and dated copy of that form PTO-1449 was intended to be included with the most recent Official Action, but a copy of was inadvertently omitted. The Examiner is thus respectfully requested to provide an initialed, signed and dated copy of the form PTO-1449 submitted with the Information Disclosure Statement filed on August 3, 2001. In connection with this matter, one of the documents

cited in that Information Disclosure Statement is Japanese Published Application No. 4-224449. Through an inadvertent typographical error, this document was listed on the form PTO-149 as Japanese document No. 4-22449. Thus, attached is a revised version of form PTO-1449 in which the Japanese document is correctly identified. The Examiner is thus respectfully requested to confirm consideration of these documents by initialing, signing and dating the enclosed additional copy of form PTO-1449.

Turning to the rejection set forth in the Official Action, the Official Action seems to imply that the '649 Japanese document discloses a wheel target braking force computing means that computes target braking forces of the respective wheels based on the estimated road surface μ slopes of the respective wheels and a target braking force of the vehicle. However, such a feature is not disclosed in the '649 Japanese document. Thus, the claimed braking force distribution control device recited in independent Claim 9 cannot be anticipated by the disclosure contained in the '649 document. Accordingly, withdrawal of that rejection and allowance of this application are earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in

resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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Attachment to Amendment dated January 24, 2003

Mark-up of Specification

Page 37, Paragraph Beginning at Line 8

Namely, the braking torque slope or the driving torque slope may be computed on the basis of time series data of wheel speed which is detected each time a predetermined sampling time elapses (refer to Fig. 1 and the like of [Japanese Patent Application] JP-A No. 10-114263).

Page 37, Paragraph Beginning at Line 13

Further, the braking torque slope may be computed on the basis of time series data of wheel deceleration which is detected each time a predetermined sampling time elapses, and on the basis of the braking torque detected each time a predetermined sampling time elapses or time series data of a physical amount which relates to this braking torque (refer to Figs. 2, 3 and the like of [Japanese Patent Application] JP-A No. 10-114263).

Attachment to Amendment dated January 24, 2003

Mark-up of Claims 2, 4 and 9

2. (Amended) A braking force distribution control device [according to claim 1,]
comprising:

wheel speed detecting means for detecting wheel speeds of respective wheels of a
vehicle;

road surface μ slope estimating means for, on the basis of the detected wheel
speeds, estimating for the respective wheels slopes of a coefficient of friction μ between the
wheels and a road surface as road surface μ slopes;

control means for, on the basis of the road surface μ slopes estimated for the
respective wheels by the road surface μ slope estimating means, distributing braking forces
to the respective wheels by controlling the braking force of each wheel; and

wherein on the basis of the detected wheel speeds, the road surface μ slope
estimating means estimates slopes of braking forces with respect to wheel slip speeds as the
road surface μ slopes for the respective wheels, and the control means controls a braking
torque of a wheel which is an object of control on the basis of the road surface μ slope of
the wheel which is an object of control and the road surface μ slope of a reference wheel
among the road surface μ slopes estimated by the road surface μ slope estimating means.

4. (Amended) A braking force distribution control device according to claim 3,
wherein when the control means one of maintains and reduces the braking torque of one of

Attachment to Amendment dated January 24, 2003

Mark-up of Claims 2, 4 and 9

the rear wheels, the control means maintains the braking torque of another of the rear wheels [as is].

9. (Amended) A braking force distribution control device [according to claim 1,]
comprising:

wheel speed detecting means for detecting wheel speeds of respective wheels of a vehicle;

road surface μ slope estimating means for, on the basis of the detected wheel speeds, estimating for the respective wheels slopes of a coefficient of friction μ between the wheels and a road surface as road surface μ slopes;

control means for, on the basis of the road surface μ slopes estimated for the respective wheels by the road surface μ slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and

wherein the control means includes:

a wheel target braking force computing means for computing target braking forces of the respective wheels on the basis of the estimated road surface μ slopes of the respective wheels and a target braking force of the vehicle; and

Attachment to Amendment dated January 24, 2003

Mark-up of Claims 2, 4 and 9

a braking force control means for controlling the braking forces of the
respective wheels on the basis of the computed target braking forces of the respective
wheels.